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## **FEATURES OF THE IMPLEMENTATION OF ESG PRINCIPLES IN THE CORPORATE GOVERNANCE SYSTEM OF CENTRAL ASIAN COUNTRIES**

The article examines the specific features of implementing ESG principles into the corporate governance systems of Central Asian countries. The relevance of the topic is determined by the need to adapt the national economies of the region to global sustainable development requirements and to increase the transparency of corporate reporting. The aim of the study is to identify institutional differences, barriers, and factors affecting the effectiveness of ESG transformation in the corporate sector of Central Asia.

The methodological basis of the study includes systemic, comparative-analytical, and institutional approaches, as well as content analysis of regulatory and legal acts, corporate reports, and statistical data from international organizations for the period 2019-2025.

The results showed that Kazakhstan has formed an institutionalized ESG model based on a developed sustainable finance infrastructure, Uzbekistan is implementing a state-centric model, while Kyrgyzstan, Tajikistan, and Turkmenistan are at the stage of institutional formation of the ESG agenda. The key barriers identified include a lack of ESG expertise, a weak regulatory framework, limited financial resources, and low business engagement.

The scientific value of the study lies in the development of a comparative model of ESG maturity for the region, while the practical significance lies in formulating directions for improving corporate governance and sustainable financing.

**Keywords:** ESG, corporate governance, sustainable development, Central Asia, sustainable finance.

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### **Орталық Азия елдерінің корпоративтік басқару жүйесіне ESG қағидаттарын енгізу ерекшеліктері**

Мақала Орталық Азия елдерінің корпоративтік басқару жүйесіне ESG қағидаттарын енгізуіндің ерекшеліктерін зерттеуге арналаған. Тақырыптың өзектілігі аймақ елдерінің ұлттық экономикаларын тұрақты дамудың жаһандық талаптарына бейімдеу және корпоративтік есептіліктің ашықтығын арттыру қажеттілігімен айқындалады. Зерттеудің мақсаты – Орталық Азияның корпоративтік секторындағы ESG-трансформацияның тиімділігіне әсер ететін институционалдық айырмашылықтарды, кедергілерді және факторларды анықтау.

Зерттеудің әдіснамалық, негізі жүйелік, салыстырмалы-талдамалық және институционалдық тәсілдерді, сондай-ақ 2019-2025 жылдар аралығындағы халықаралық үйымдардың нормативтік-құқықтық актілеріне, корпоративтік есептеріне және статистикалық деректеріне контент-талдау жүргізуі қамтиды.

Нәтижелер көрсеткендей, Қазақстан тұрақты қаржыландырудың дамыған инфрақұрылымына сүйенетін институционалданған ESG моделін қалыптастыруды, Өзбекстан мемлекеттік-орталық моделін жүзеге асыруда, ал Қыргызстан, Тәжікстан және Түркіменстан ESG құн тәртібінің институционалдық қалыптасу сатысында түр. ESG сараптамасының жетіспеушілігі, нормативтік базаның әлсіздігі, қаржылық ресурстардың шектеулігі және бизнестің төмен дөнгейдегі қатысуы сияқты негізгі кедергілер де анықталды.

Зерттеудің ғылыми құндылығы аймақ үшін ESG жетілуінің салыстырмалы моделін өзірлеуде, ал практикалық маңыздылығы – корпоративтік басқару мен тұрақты қаржыландыруды жетілдіру бағыттарын тұжырымдауда көрініс табады.

**Түйін сөздер:** ESG, корпоративтік басқару, тұрақты даму, Орталық Азия, тұрақты қаржыландыру.

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## Особенности внедрения принципов ESG в систему корпоративного управления стран Центральной Азии

Статья посвящена исследованию особенностей внедрения принципов ESG в систему корпоративного управления стран Центральной Азии. Актуальность темы обусловлена необходимостью адаптации национальных экономик региона к глобальным требованиям устойчивого развития и повышению прозрачности корпоративной отчётности. Цель исследования – выявить институциональные различия, барьеры и факторы, влияющие на эффективность ESG-трансформации в корпоративном секторе Центральной Азии.

Методологическая основа исследования включает системный, сравнительно-аналитический и институциональный подходы, а также контент-анализ нормативно-правовых актов, корпоративных отчётов и статистических данных международных организаций за 2019–2025 гг.

Результаты показали, что Казахстан сформировал институционализированную модель ESG, опирающуюся на развитую инфраструктуру устойчивого финансирования, Узбекистан реализует государственно-центричную модель, а Кыргызстан, Таджикистан и Туркменистан находятся на стадии институционального становления ESG-повестки. Выявленные ключевые барьеры – недостаток ESG-экспертизы, слабая нормативная база, ограниченные финансовые ресурсы и низкая вовлечённость бизнеса.

Научная ценность исследования заключается в разработке сравнительной модели ESG-зрелости для региона, а практическая значимость – в формулировке направлений совершенствования корпоративного управления и устойчивого финансирования.

**Ключевые слова:** ESG, корпоративное управление, устойчивое развитие, Центральная Азия, устойчивое финансирование.

### Introduction

In the context of the global transformation of economic and managerial systems, the principles of sustainable development (Environmental, Social and Governance – ESG) are becoming an integral element of strategic planning and corporate governance. In recent years, the formation of ESG-oriented models has acquired particular significance for countries with emerging market economies, including the states of Central Asia. The region is characterized by a high dependence on resource-based industries, a significant share of carbon-intensive production, and limited access to sustainable development financial resources, which determines the need for a comprehensive implementation of ESG principles in corporate and public practice.

The choice of the research topic is due to the fact that, despite the growing interest in issues of sustainable development and corporate responsibility in the scientific and analytical literature, there is still insufficient elaboration of the comparative aspects of ESG implementation in Central Asian countries. Existing studies generally focus on individual elements of environmental or social policy, while the integration of ESG principles into corporate governance systems is considered only fragmentarily. Thus, a problematic situation arises, consisting in

the absence of a comprehensive analysis of the factors, mechanisms, and peculiarities of implementing the ESG agenda in a regional context.

The relevance of the study is further reinforced by the fact that, amid increasing climate risks and international investors' demands for transparency in corporate reporting, the countries of Central Asia are compelled to adapt their corporate governance systems to the new principles of sustainability. On the one hand, Kazakhstan, as the most developed economy in the region, has demonstrated significant progress – the introduction of a national carbon trading system, the development of a “green” bond market, and the adoption of a strategy for achieving carbon neutrality by 2060 (Spankulova et al., 2025). On the other hand, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan are only beginning to form the institutional foundations of ESG policy, facing barriers such as a lack of data, weak business motivation, and limited access to green financing (AIFC&GIP, 2024; Kabilovna & Nasriddinovna, 2024; Ismailakhunova et.al., 2025). These differences make the Central Asian region a unique platform for analyzing how corporate governance can contribute to the transition toward a sustainable development model.

The theoretical foundation of the study is formed by the works of domestic and foreign authors devoted to the problems of sustainable development,

corporate social responsibility, and institutional regulation of ESG practices. In particular, the studies of international organizations (UNDP, 2021) reflect general approaches to assessing ESG integration; however, the regional specifics of Central Asia remain insufficiently explored. The present study aims to fill this gap.

The purpose of the research is to identify the features of implementing ESG principles in the corporate governance systems of Central Asian countries, to determine institutional differences, key barriers, and factors influencing the effectiveness of ESG transformation.

To achieve this goal, the following objectives are set:

1. To analyze international and national approaches to the formation of ESG policies.
2. To conduct a comparative analysis of the degree of ESG principles implementation in the five countries of Central Asia.
3. To identify key factors determining differences in the level of ESG maturity of corporate governance.
4. To determine the role of government regulation, financial institutions, and business in promoting ESG initiatives.
5. To formulate directions for improving ESG practices in order to enhance the competitiveness and attractiveness of investment in the region.

The object of the research is the corporate governance systems of the Central Asian countries.

The subject of the research is the mechanisms, instruments, and specific features of implementing ESG principles within these systems.

The methodological basis is founded on systemic and comparative approaches, content analysis of regulatory and strategic documents, as well as the synthesis of analytical reports and statistical indicators.

The research hypothesis assumes that the effectiveness of ESG principles implementation in corporate governance directly depends on the level of institutional maturity of national economies, the development of sustainable financing instruments, and the interaction between the state and business within the ESG agenda.

The scientific novelty of the study lies in identifying the regional characteristics of ESG transformation in the corporate sector of Central Asia and in proposing a conceptual model for integrating ESG principles into corporate governance, considering the specifics of the region's socio-economic development.

The practical significance of the research is that the obtained results can be used in the development of national ESG strategies, corporate sustainability codes, as well as for educational and analytical purposes is assessing the maturity of ESG practices in developing economies.

## Literature review

In recent years, the principles of ESG (Environmental, Social, and Governance) have taken a central place in the global sustainable development agenda, becoming the foundation of a new model of corporate governance and investment policy. Contemporary research demonstrates that the integration of ESG factors into company strategies contributes to the creation of long-term value, reduces investment risks, and increases business resilience to external shocks (Tariq, 2024). ESG transformation is viewed not only as an instrument of environmental and social responsibility but also as a factor that enhances the effectiveness of corporate governance and business transparency.

In academic literature, ESG is interpreted as a combination of ethical, economic, and managerial factors that influence enterprise development strategy. The shift from a profit-centric approach to a comprehensive consideration of environmental, social, and governance criteria is viewed as a necessary condition for sustainable growth (Luo et al., 2024). ESG is commonly conceptualized through three fundamental dimensions: environmental – related to emission reduction and resource efficiency, social – encompassing equality, human capital development, and labor rights, governance – linked to transparency and accountability in managerial decisions (Li et al., 2021).

Studies by foreign authors emphasize that the successful integration of ESG principles requires institutional support from the state, adaption of corporate governance mechanisms to ownership structures, and the implementation of reporting standards aligned with international systems such as GRI, SASB, and IFRS S1/S2 (Dinh & Calabro, 2018; Mahmood et al, 2018). It is also noted that board-level oversight and the integration of ESG indicators into strategic planning and risk management processes have become essential components of effective corporate governance (Rashid, 2018).

Empirical research confirms the relationship between ESG and increased innovation potential, transparency, and financial performance. Evidence shows that a high level of ESG disclosure contrib-

utes to improvements in both social and economic indicators of companies (Alsayegh et al., 2020). Similarly, research demonstrates that the integration of ESG principles into corporate practice enhances investor confidence and reduces the risk of corporate conflicts, particularly in developing market countries (Rasool et al., 2025).

International experience demonstrates that the implementation of ESG principles in corporate governance can be achieved through clearly structured regulatory mechanisms and standardized requirements for non-financial disclosure. For example, in the European Union, the regulatory framework includes the Corporate Sustainability Reporting Directive (CSRD), which obliges companies to treat sustainability as an integral part of corporate reporting (Miller, 2025). Companies falling under CSRD are required to disclose a wide range of ESG indicators – from greenhouse gas emissions and resource use to risk management, social policies, and corporate governance mechanisms – in accordance with the European Sustainability Reporting Standards (ESRS). These standards aim to ensure comparability, reliability, and materiality of ESG information, thereby strengthening the accountability of boards of directors and senior management for sustainable development (Leal Filho et al., 2025).

Japan represents another illustrative example of institutionalizing ESG disclosure within the corporate governance system. In 2022, the Sustainability Standards Board of Japan (SSBJ) was established and mandated to develop national sustainability reporting standards aligned with the international approach of the International Sustainability Standards Board (ISSB) (SSBJ, 2025).

In 2025, the SSBJ published the first national sustainability disclosure standards. The new package includes a general-purpose standard and two thematic standards – «General Disclosures» and «Climate-related Disclosures». These standards were designed to be functionally aligned with IFRS S1 and IFRS S2, ensuring the comparability of Japanese reporting with international practice.

An important milestone in the development of Japan's ESG regulatory system was achieved earlier, in 2023, when the Financial Services Agency (FSA) introduced a mandatory requirement for all public companies to include a sustainability-related section in their annual securities reports. These disclosures must correspond to the four key components recommended by the Task Force on Climate-related Financial Disclosures (TCFD): governance, strategy, risk management, metrics and targets (EY, 2023).

This set of reforms reflects Japan's transition from a hybrid «comply or explain» model to a more stringent and institutionalized system of ESG disclosure regulation. The creation of national SSBJ standards and the mandatory TCFD-aligned disclosures increase the transparency of corporate reporting, strengthen investor confidence, and establish conditions for long-term sustainable corporate governance (Schumacher et al., 2020).

Another example is the Korea Exchange (KRX) in South Korea, which in 2021 published ESG Disclosure Guidelines aimed at encouraging listed companies to provide ESG information. In recent years, the government and regulatory authorities have also taken steps toward a transition from voluntary to mandatory disclosure: key documents such as the K-ESG Guideline and the national K-Taxonomy have been developed, and the process of introducing mandatory ESG reporting and sustainable finance has begun (Matanle et al., 2025). South Korea's legislative measures are aimed at increasing transparency, reducing ESG-related greenwashing risks, and aligning corporate governance standards with international practice (IFRS Foundation, 2023).

A comparative analysis of these models shows that the EU's approach is oriented toward strict institutionalization – mandatory reporting, unified disclosure standards, double materiality of ESG risks, and board-level responsibility. In contrast, Asian models (Japan, South Korea) combine voluntary and mandatory measures, flexible regulation, market incentives, and a gradual expansion of coverage, making them more adaptable for companies in emerging economies.

The international experience demonstrates various institutional models of ESG integration, which form an important benchmark for assessing the maturity and development trajectory of ESG systems in Central Asia.

In the countries of Central Asia, the transition towards ESG principles is gradually moving beyond declarative statements and becoming an integral part of strategic management. Over the past five years, interest in sustainable development has significantly increased among government institutions, the financial sector, and corporate businesses (Devi et al., 2024). The growing importance of ESG is also linked to its role as a key indicator of corporate sustainability and investment attractiveness (Duque-Gristales & Aguilera-Caracuel, 2021). This trend is driven not only by the global emphasis on environmental and social responsibility but also by the growing dependence of national economies on

foreign investments, where ESG serves as a key criterion for assessing corporate sustainability and risk.

The region, however, is characterized by pronounced institutional heterogeneity. Kazakhstan acts as a leader, forming the regulatory, financial, and infrastructural foundation for the development of ESG practices (Kuanova et al., 2023). On Uzbekistan and Kyrgyzstan, the implementation process is carried out mainly through the adaptation of national strategies to the Sustainable Development Goals, with the support of international organizations (Cui et al., 2025). Tajikistan and Turkmenistan are at the initial stage of ESG agenda formation, where environmental and social policy issues are being integrated into broader economic modernization programs. Thus, the Central Asian countries demonstrate varying levels of ESG maturity, determined by a combination of internal reforms and external institutional pressure.

In the context of Central Asia, ESG initiatives acquire particular importance due to the region's structural challenges – climate vulnerability, resource dependence, and institutional heterogeneity. The Central Asian countries demonstrate varying levels of ESG system maturity: Kazakhstan and Uzbekistan are forming institutional platforms, Kyrgyzstan and Tajikistan are developing basic regulatory mechanisms, while Turkmenistan adheres mainly to declarative approaches.

Kazakhstan demonstrates the most significant progress in the region in promoting ESG principles. National companies are transitioning to a sustainable management model that combines economic and socio-environmental priorities. The country has established a “green” bond market, developed a carbon trading system, and adopted a strategy to achieve carbon neutrality by 2060 (Zinetullina et al., 2025). Despite this progress, research shows that key barriers remain insufficient ESG literacy, limited resources, and fragmented regulation, which require further strengthening of the institutional framework and wider involvement of small and medium-sized enterprises (SMEs) (Kuur et al., 2024). At the same time, the disclosure of ESG information in Kazakhstan's financial market remains largely voluntary and unsystematic, which reduces data reliability and hinders the formation of unified and transparent reporting (Azretbergenova et al., 2023).

In Uzbekistan, there is an observable shift from declarative ESG policies to their institutionalization (Shaislamova & Kudratova, 2024). Government programs stimulate the development of sustainable practices, partnerships are being established with

international financial institutions, and specialized sustainability departments are being formed within the corporate sector. In Kyrgyzstan and Tajikistan, the ESG agenda is at an early stage of development, with the main focus on renewable energy, social protection, and climate change adaption (Komentantova et al., 2022). Turkmenistan is taking its first steps, focusing on energy efficiency and environmental modernization; however, institutional, and regulatory support remains limited.

The existing literature confirms the growing interest in ESG principles as an instrument of sustainable development but also highlights the need for further research aimed at a comprehensive comparison of national models for implementing ESG principles within the corporate governance systems of Central Asian countries. The present study fills this gap by focusing on institutional features, barriers, and mechanisms for adapting ESG practices in the regional context.

## Methodology

The methodological basis of the study is founded on an interdisciplinary approach that combines theoretical, comparative-analytical, institutional, and empirical methods. The research was conducted in several stages, which ensured the systematic nature of the analysis and the reliability of the obtained results.

At the first stage, a theoretical and methodological analysis of the ESG concept was carried out in the context of sustainable development and corporate governance. Using the method of historicism, the evolution of the concepts of “sustainable development” and “ESG agenda” in global practice was traced. Content analysis of scientific publications and analytical materials made it possible to identify key approaches to assessing the effectiveness of ESG policies, as well as to reveal gaps in existing research related to the institutional characteristics of the Central Asia region.

At the second stage, empirical data were collected and systematized, including official national strategies, regulatory and legal documents, corporate ESG reports of leading companies from Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan, as well as analytical reviews by international organizations (UNDP, 2023, EDB) for the period 2019-2025. The collected materials were classified into three categories: environmental, social, and governance components of corporate management.

At the third stage, comparative-analytical and institutional methods were applied, allowing for the identification of the features of state regulation of ESG practices, the degree of business and financial institution involvement, and the differences in the level of institutionalization of ESG systems across the countries of the region. Content analysis of strategic and corporate documents made it possible to determine the priority directions of ESG integration and the key barriers to their development.

At the fourth stage, methods of statistical generalization and structural analysis were applied. These methods ensured the systematization of quantitative indicators such as the volume of investments in “green” projects, the share of companies publishing non-financial reports, indicators of carbon intensity, and the scale of development of sustainable financing instruments. The obtained data made it possible to identify trends in the formation of ESG institutions and to assess the dynamics of their development in a regional context.

The final stage included synthetic and interpretative analysis aimed at forming a comprehensive understanding of the influence of ESG principles on the corporate governance system and developing recommendations for their further implementation. The application of a systemic approach made it possible to consider ESG as interrelated components of a unified model of sustainable corporate development that ensures the integration of environmental, social, and governance factors into corporate strategy.

The methodological framework of the study is based on a combination of qualitative and quantitative methods that ensure the scientific validity and reproducibility of the results. The application of a multi-stage analysis made it possible to objectively assess the current state of the ESG agenda in the countries of Central Asia and to formulate the conclusions.

## Results and discussion

Kazakhstan holds a leading position in Central Asia in the implementation of ESG principles and the development of sustainable finance infrastructure. The advancement of ESG is being carried out through legislative reforms, institutional mechanisms, and the active involvement of the financial sector. A key role is played by the Astana International Financial Centre (AIFC) and its Green Finance Centre (GFC), which account for approximately 80% of the regional green finance market.

Between 2020 and 2024, the volume of sustainable financing in Kazakhstan reached UDS 1.389 billion, with the majority of bond issuances undergoing international verification. The Green Climate Fund (GCF) also contributes significantly to the development of green initiatives, supporting three projects with a total value of USD 173 million (AIFC&GIP, 2024).

Kazakhstan has also become the first country in the Commonwealth of Independent States (CIS) to implement a national carbon trading system, covering nearly half of all CO<sub>2</sub> emissions. The system includes 135 companies operating 212 facilities, making it one of the most advanced in the region (AIFC, 2025). Within the framework of the Strategy for Achieving Carbon Neutrality by 2060, investments totaling USD 610 billion are planned, reflecting the transition toward a low-carbon and innovation-driven economy (Zhakiyev et al., 2023). Kazakhstan demonstrates a strategic shift from a carbon-intensive model to an innovation-oriented and environmentally sustainable economy, making it a key actor in regional climate policy.

According to PwC (2024), Kazakhstan shows the highest level of managerial engagement in ESG among Eurasian countries: in 69% of companies, ESG implementation is overseen by top management, in 52% by boards of directors, and one-third of companies already have specialized departments and committees. More than half of the companies have adopted ESG strategies, a quarter of which include specific KPIs. This indicates a transition from declarative measures to the systemic integration of ESG into corporate governance.

The combination of institutional support, financial sector engagement, and international partnerships forms a model in which Kazakhstan serves as a regional hub of ESG leadership, combining economic growth with climate responsibility.

In contrast to Kazakhstan, where the implementation of ESG principles is driven primarily by the private sector and financial institutions, in Uzbekistan sustainable financing is developing mainly within the framework of a state-centered model. The government acts as the main driver of ESG integration, employing tools of strategic planning, regulatory frameworks, and the issuance of sovereign bonds.

Uzbekistan issued bonds linked to the Sustainable Development Goals (SDGs), raising USD 235 million in 2021 for social and infrastructure projects (Jumaniyazov et al., 2025). In 2023, the country also mobilized around USD 337 million through debut

“green” bonds denominated in the national currency with the support of UNDP. In 2024, the Ministry of Finance issued two tranches of sovereign SDG bonds worth EUR 600 million and EUR 500 million, marking the transition to a regular practice of sustainable borrowing (Yudina, 2025). The increased investor interest reflects growing confidence in Uzbekistan’s ESG instruments, despite the persisting country risk.

At the corporate level, a gradual formation of the private segment of sustainable finance is being observed. The institutional framework is also actively evolving. Uzbekistan became the second country in the region, after Kazakhstan, to develop its own taxonomy, thereby strengthening its position in shaping the regional green capital market.

According to PwC (2024), 46% of companies in the country demonstrate an understanding of ESG principles, although half of respondents assess their economic impact as moderate. Responsibility for ESG lies mainly with boards of directors and top management, while specialized structures remain underdeveloped – reflecting a transitional stage of corporate practice from declarative acknowledgment to institutionalization.

Although financial performance remains a business priority, growing attention is being paid to social issues such as working conditions, education, and employee safety, while the environmental component is being integrated more slowly. However, the expansion of government programs and international cooperation is creating favorable conditions for ESG-driven innovations.

Uzbekistan’s model combines state leadership with the gradual involvement of the private sector, transforming ESG instruments into a foundation for economic modernization and strengthening investment resilience.

In the countries of Central Asia, where state institutions play a dominant role in regulating economic processes, the formation of the ESG agenda is progressing unevenly. Kyrgyzstan, Tajikistan, and Turkmenistan demonstrate an initial stage of institutionalizing sustainable development, with key attention focused on climate policy, energy transition, and the creation of elements of regulatory infrastructure. Unlike Kazakhstan and Uzbekistan, where sustainable finance has already acquired corporate and investment forms, in these countries ESG functions primarily as an instrument of governmental and donor-driven climate policy (Skolkovo, 2022).

In Kyrgyzstan, since 2023, the regulatory and institutional framework for sustainable finance has

been under development. The National Bank approved the Roadmap for Sustainable Finance and the Implementation of ESG Principles, which provides for the integration of ESG risks into banking supervision, adaption to international reporting standards IFRS S1-S2 and ISSB, as well as strengthening the resilience of the financial sector. An important step was the adoption of the ESG Guide by the Kyrgyz Stock Exchange (KSE), compliance with which has become mandatory for public companies under the “comply or explain” principle. This decision promotes transparency and improves the quality of non-financial reporting, aligning the corporate sector with international GRI and SASB standards (Ismailakhunova et.al, 2025).

However, as noted by the European Bank for Reconstruction and Development, corporate governance maturity remains low: the number of independent board committees is limited, and non-financial reporting is often formal in nature. At the same time, the launch of the first sustainable finance instruments on the KSE and the preparation for the issuance of green bonds create the foundation for the development of the local ESG capital market. In the climate sphere, Kyrgyzstan has committed to reducing greenhouse gas emissions by 15.97% by 2030, which gives the ESG agenda a strategic orientation and links it to the country’s national commitments under the Paris Agreement (Davtyan & Khachikyan, 2024).

In Tajikistan, the environmental component of ESG holds a dominant position due to the structure of the country’s energy balance, in which more than 90% of electricity is generated by hydroelectric power plants (Kosowska & Kosowski, 2022). This dependence on hydropower resources simultaneously reduces the carbon footprint and increases climate risks associated with seasonality and glacial melting. According to the updated Nationally Determined Contribution (NDC), the country has committed to reducing greenhouse gas emissions by 30-40% unconditionally, and up to 50% with international support, by 2030. These goals are supported by plans to modernize major hydroelectric stations, improve energy efficiency, and develop sustainable agriculture. The National Bank of Tajikistan, together with international partners, is implementing initiatives for the introduction of sustainable finance principles; however, the absence of unified standards for non-financial reporting and the low level of corporate sector transparency limit the potential for attracting green investments. The main prospects are associated with the integration of ESG

criteria into large hydropower megaprojects, which could enhance their compliance with international environmental and social standards.

Turkmenistan remains one of the most closed economies in the region, where ESG integration faces significant institutional barriers. The country's economy continues to rely on hydrocarbon exports, which account for more than 90% of foreign currency revenues, creating a contradiction between economic priorities and environmental commitments (Iwaszczuk et al., 2021). In its updated Nationally Determined Contribution, Turkmenistan announced its intention to reduce greenhouse gas emissions by 20% by 2030 (Penjiyev, 2024). The country lacks both a national ESG strategy and stock market, which restricts the development of corporate reporting and transparency. Despite these limitations, the government has initiated several modernization efforts in the fuel and energy sector, with a particular focus on energy efficiency and the gradual adoption of renewable energy technologies. In cooperation with UNDP and the Global Environment Facility, Turkmenistan has launched a number of projects aimed at promoting energy-efficient practices and introducing solar energy solutions in selected sectors, signaling the country's cautious steps toward diversifying its energy mix and strengthening environmental management (UNDP, 2021; UNDP, 2023).

Common features for Kyrgyzstan, Tajikistan, and Turkmenistan include the fragmented nature of the regulatory framework, low engagement of the

private sector, limited competencies in non-financial reporting, and dependence on international institutions. ESG development occurs mainly in the form of individual climate and energy initiatives, while corporate institutionalization remains at an early stage. At the same time, the formation of national taxonomies, the growing activity of central banks, and the involvement of international partners create the preconditions for a transition from project-based initiatives to a systemic model of ESG governance. These processes reflect the gradual integration of the countries into the regional architecture of sustainable development in Central Asia, where ESG is becoming an instrument for institutional modernization and enhancing investment attractiveness.

Despite the emergence of several progressive initiatives, the countries remain at an early stage of ESG transformation. The lag is determined by a combination of structural factors – limited institutional capacity, dependence on external financing, underdeveloped financial markets, and insufficient transparency of the corporate sector. In the context of weak economic diversification and dominant state regulation, the ESG agenda is perceived more as an external requirement than as an internal managerial necessity, which slows down the formation of sustainable corporate practices.

Summarizing the analysis across the five countries of the region, it is possible to identify both common and specific features in the formation of ESG systems. Their comparative characteristics are presented in Table 1.

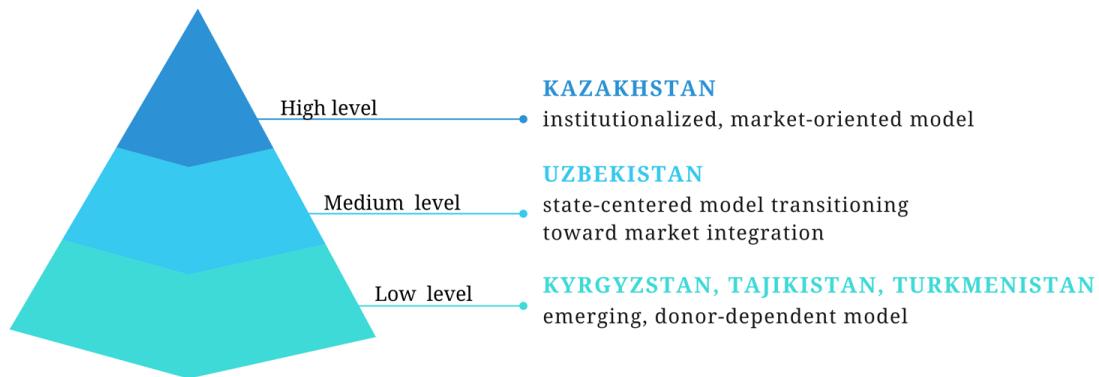
**Table 1** – Comparative analysis of ESG maturity in Central Asia countries

Indicator	Kazakhstan	Uzbekistan	Kyrgyzstan	Tajikistan	Turkmenistan
<b>Level of ESG maturity</b>	High	Medium	Low	Low	Low
<b>Type of ESG model</b>	Institutionalized, market-oriented	State-centered, transitional	Emerging, regulated	Climate-centered, project-based	Declarative, resource-based
<b>Corporate implementation</b>	Broad implementation of ESG strategies and reporting under GRI and SASB standards	Expansion of ESG practices in the public and banking sectors	Initial stage, pilot projects and formal reports	Fragmentary implementation in energy and agriculture	ESG components limited to environmental initiatives of state-owned companies
<b>Main ESG focus</b>	Sustainable finance, decarbonization, corporate governance	Green and SDG binds, development of climate finance	Financial sector, climate adaption, green bonds	Renewable energy, water resource management	Energy efficiency, reduction of methane emissions

Note – compiled by the authors based on the source (Skolkovo, 2022; AIFC&GIP, 2024)

A comparison of the Central Asian countries makes it possible to distinguish three conditional levels of ESG practice maturity. Kazakhstan is forming a sustainable model with institutional support and active corporate participation; Uzbekistan

is in the process of consolidating its regulatory and market framework; while Kyrgyzstan, Tajikistan, and Turkmenistan remain at the initial stage of implementation, relying mainly on external initiatives. This hierarchy is illustrated in Figure 1.



**Figure 1 – Pyramid of ESG maturity levels in Central Asian countries**  
 Note – compiled by the authors

*High level – Kazakhstan.* The country has established an institutionalized ESG system that includes legally defined standards of sustainable finance, a functioning infrastructure through the AIFC, and active participation of the corporate sector. Kazakhstan demonstrates integration of ESG principles into corporate governance, strategic planning, and investment processes.

*Medium level – Uzbekistan.* This level is characterized by a transition toward a comprehensive ESG management model, where the state plays a key role in forming regulatory frameworks and stimulating the sustainable capital market through the issuance of sovereign and corporate bonds. The corporate

sector is gradually becoming involved in the process of institutionalization.

*Low level – Kyrgyzstan, Tajikistan, and Turkmenistan.* In these countries, the ESG agenda remains fragmented, and the implementation of sustainable development principles depends mainly on international financial institutions and donor programs. Corporate practice is at an early stage, and the institutional framework is still in the process of formation.

To develop recommendations for improving the effectiveness of ESG integration in the Central Asian countries, key institutional barriers and corresponding measures to overcome them were identified (Table 2).

**Table 2 – Key barriers to ESG implementation and recommended development directions in Central Asian countries**

Country	Key barriers to ESG implementation	Recommended measures and development directions
Kazakhstan	<ul style="list-style-type: none"> <li>– Lack of qualified ESG specialists</li> <li>– High cost of auditing non-financial reporting</li> <li>– Fragmentation of data-disclosure standards</li> <li>– Uneven ESG implementation among regional companies</li> </ul>	<ul style="list-style-type: none"> <li>– Introduction of a national certification system for ESG experts</li> <li>– Development of the domestic “green” bond market</li> <li>– Harmonization of reporting standards with GRI and IFRS S1/S2</li> <li>– Support of regional ESG projects through grant mechanisms</li> </ul>

Continuation of the table

Country	Key barriers to ESG implementation	Recommended measures and development directions
Uzbekistan	<ul style="list-style-type: none"> <li>– Limited institutional coordination between ministries</li> <li>– Insufficient depth of corporate reporting</li> <li>– Weak participation of SMEs in ESG initiatives</li> <li>– Low liquidity of the sustainable-finance market</li> </ul>	<ul style="list-style-type: none"> <li>– Creation of a unified ESD-regulation center</li> <li>– Mandatory implementation of non-financial reporting for state-owned companies by 2026</li> <li>– Competence-building programs for SMEs</li> <li>– Stimulation of the issuance of corporate ESG instruments</li> </ul>
Kyrgyzstan	<ul style="list-style-type: none"> <li>– Lack of unified statistical data and sustainability indicators</li> <li>– Weak regulatory framework</li> <li>– Dependence on donor financing</li> <li>– Limited resources of regulators and supervisory authorities</li> </ul>	<ul style="list-style-type: none"> <li>– Development of a green taxonomy and ESG methodological recommendations</li> <li>– Expansion access to ESG financing through development banks</li> <li>– Creation of ESG education centers</li> <li>– Institutional strengthening of regulators</li> </ul>
Tajikistan	<ul style="list-style-type: none"> <li>– Limited institutional capacity</li> <li>– Insufficient private-sector involvement</li> <li>– Lack of corporate reporting and systematic monitoring</li> <li>– Insufficient verification of ESG indicator data</li> </ul>	<ul style="list-style-type: none"> <li>– Integration of ESG principles into state energy and climate programs</li> <li>– Attracting the private sector through tax incentives</li> <li>– Creation of a national ESG register of companies</li> <li>– Support for independent auditing and monitoring</li> </ul>
Turkmenistan	<ul style="list-style-type: none"> <li>– Closed corporate sector</li> <li>– Lack of ESG regulation</li> <li>– High concentration of the economy in the hydrocarbon sector</li> <li>– Low transparency and data availability</li> </ul>	<ul style="list-style-type: none"> <li>– Development of a national ESG strategy</li> <li>– Expanding participation in international climate initiatives</li> <li>– Increasing transparency of state-owned companies in the energy sector</li> <li>– Creating an independent center for ESG statistics and monitoring</li> </ul>

Note – complied by the authors

The analysis revealed common institutional and human resource barriers for all countries in the region, with their nature and depth depending on the level of ESG maturity. Kazakhstan and Uzbekistan are focused on improving regulation and corporate instruments, while Kyrgyzstan, Tajikistan, and Turkmenistan are in the process of developing basic regulatory, educational, and analytical mechanisms. The implementation of the proposed measures will make it possible to build a phased model of ESG integration in Central Asia, considering national characteristics and sustainable development priorities.

## Conclusion

The conducted study aimed to identify the specific features of ESG principle implementation in the corporate governance systems of Central Asian countries, as well as to analyze institutional differences, barriers, and factors determining the effectiveness of ESG transformation. To achieve this goal, systemic, comparative-analytical, institutional, and empirical methods were applied, ensuring the comprehensiveness of the analysis and the reliability of the conclusions. The methodological frame-

work of the study was based on a combination of qualitative and quantitative tools, including content analysis of regulatory acts, corporate reports, and statistical data from international organizations for the period 2019-2025.

The results of the research confirmed the hypothesis that the effectiveness of ESG principle implementation in corporate governance directly depends on the level of institutional maturity of national economics, the development of sustainable financing mechanisms, and the degree of interaction between the state and business. The analysis showed that different models of ESG integration have been formed in the Central Asian countries, reflecting their economic and institutional characteristics.

Kazakhstan acts as the regional leader, having established a developed infrastructure of sustainable finance and a regulatory framework that includes carbon trading, a green bond market, and a strategy for achieving carbon neutrality by 2060. Uzbekistan implements a state-centered model in which the key role belongs to government institutions and international partners actively developing the market for ESG instruments. Kyrgyzstan, Tajikistan, and Turkmenistan are at the stage of ESG agenda formation,

where institutionalization processes remain fragmented and depend largely on international support.

The comparative analysis made it possible to identify three levels of ESG maturity:

- High level (Kazakhstan) – institutionalized, market-oriented model;
- Medium level (Uzbekistan) – state-centered model transitioning toward market integration;
- Low level (Kyrgyzstan, Tajikistan, and Turkmenistan) – emerging, donor-dependent model.

The study also identified a system of institutional and structural barriers characteristic of the region. For countries with a higher level of ESG maturity (Kazakhstan and Uzbekistan), the main challenges remain the need to standardize non-financial reporting, develop ESG expertise, and engage regional companies. For countries with a lower level of maturity (Kyrgyzstan, Tajikistan, and Turkmenistan), the key issues include limited institutional resources, a weak regulatory framework, dependence on donor programs, and low business involvement. Despite these differences, common challenges for all countries include a shortage of qualified personnel, insufficient ESG data, and the need to consolidate regulatory frameworks.

In this regard, the strategic directions for development are:

- Forming a unified approach to national ESG standards and harmonizing them with international systems (GRI, IFRS S1/S2);
- Developing human capital by training ESG specialists and creating national centers of excellence;

- Encouraging the corporate sector to adopt voluntary and then mandatory non-financial reporting;

- Developing a regional platform for cooperation and exchange of best practices in sustainable finance;

- Strengthening the role of financial institutions in promoting ESG instruments and climate investments.

Thus, the conducted study made it possible to summarize the features and levels of ESG institutionalization in the Central Asian countries, identify the patterns of their development, and outline the key directions for improving corporate governance in the context of sustainability. The obtained results contribute to the development of scientific knowledge about ESG transformation processes in emerging economies and can be used in the formulation of national ESG strategies, corporate sustainability codes, and educational programs.

Prospects for further research are associated with an in-depth analysis of the influence of ESG factors on companies' innovation activity, financial stability, and the investment attractiveness of the region, as well as with the development of integrated ESD maturity indices for monitoring the dynamics of corporate transformations. In the long term, the implementation of the proposed measures will make it possible to build an effective ESG management model that combines economic efficiency, environmental responsibility, and social justice, ensuring the transition of Central Asian countries toward a sustainable and competitive economy of the future.

## References

AIFC, GIP (2024). State of Sustainable Finance in Central Asia. Astana International Finance Centre Authority. [https://aifc.kz/wp-content/uploads/2024/07/1.3-ca-to-publish-eng\\_compressed.pdf](https://aifc.kz/wp-content/uploads/2024/07/1.3-ca-to-publish-eng_compressed.pdf)

AIFC (2025). Emissions Trading Systems and Voluntary Carbon Market: Global Overview and Prospects for Kazakhstan. <https://aifc.kz/wp-content/uploads/2025/02/emissions-trading-systems-and-voluntary-carbon-market-global-overview-and-prospects-for-kazakhstan.pdf>

Alsayegh, M.F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. *Sustainability*, 12(9), 3910. <https://doi.org/10.3390/su12093910>

Azretbergenova, G., Yessymkhanova, Z., & Yessenali, A. (2023). Development of ESG-transparency in the financial market of Kazakhstan. *State Audit*, 59(2), 43-52. <https://doi.org/10.55871/2072-9847-2023-59-2-43-52>

Cui, X., Wang, X. Z., & Li, T. (2025). The impact of ESG compliance on the operating efficiency of commercial banks in Central Asia. *Frontiers in Interdisciplinary Applied Science*, 1(1), 34-46. ISSN 3008-1394. <https://doi.org/10.71465/fias.v2i01.14>

Devi, L. V., Arifianto, M. D., & Juliania, R. (2024). ESG, country governance indicators and company value: Evidence from Asia. *Journal of Infrastructure, Policy and Development*, 8(14), 9195. <https://doi.org/10.24294/jipd9195>

Dinh, T. Q., & Calabro, A. (2018). Asian family firms through corporate governance and institutions: A systematic review of the literature and agenda for future research. *International Journal of Management Reviews*, 21(1), 50-75. <https://doi.org/10.1111/ijmr.12176>

Duque-Grisales, E., & Aguilera-Caracuel, J. (2021). Environmental, social and governance (ESG) scores and financial performance of multilaterals: Moderating effects of geographic international diversification and financial slack. *Journal of Business Ethics*, 168(2), 315-334. <https://doi.org/10.1007/s10551-019-04177>

ESG Awareness in Eurasia: Survey. PWC Kazakhstan Edition. (2024, July 1). <https://www.pwc.com/kz/en/assets/esg-awareness/kz-esg-awareness-eng.pdf>

ESG Awareness in Eurasia: Survey. PWC Uzbekistan Edition. (2024, July 1). <https://www.pwc.com/kz/en/assets/esg-awareness/uz-esg-awareness-eng.pdf>

EY Strategy and Consulting CO., Ltd. (2023). What's next for Japanese sustainability disclosure standards? Ernst & Young Japan. [https://www.ey.com/en\\_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards](https://www.ey.com/en_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards)

IFRS Foundation. (2023). Jurisdictional snapshot: Japan. <https://www.ifrs.org/content/dam/ifrs/publications/sustainability-jurisdictions/pdf-snapshots/japan-ifrs-snapshot.pdf>

Iwaszczuk, N., Wolak, J., & Iwaszczuk, A. (2021). Turkmenistan's gas sector development scenarios based on econometric and SWOT analysis. *Energies*, 14(10), 2740. <https://doi.org/10.3390/en14102740>

Jumaniyazov, I.T., Aminova, N.U. (2025). Green Sovereign Bonds: A Financial Opportunity of Risk for Developing Countries? *Modern American Journal of Business, Economics, and Entrepreneurship*, 1(3), 361-371. <https://usajournals.org/index.php/4/article/view/546/585>

Kabilovna, S. N., & Nasriddinovna, K. F. (2024). Principles of ESG implementation in companies of Uzbekistan: A Comprehensive analysis. *JournalNX*, 10(5), 42-51. <https://repo.journalnx.com/index.php/nx/article/view/5350/5084>

Komendantova, N., Rovenskaya, E., Strelkovskii, N., & Santiago, F. (2022). Impacts of various connectivity processes in Central Asia on sustainable development of Kyrgyzstan. *Sustainability*, 14(12), 6998. <https://doi.org/10.3390/su14126998>

Kosowska, K., & Kosowski, P. (2022). Energy security of hydropower producing countries – The cases of Tajikistan and Kyrgyzstan. *Energies*, 15(21), 7822. <https://doi.org/10.3390/en15217822>

Kuanova, L., Sagiyeva, R., & Zaitenova, N. (2023). Analytical review of experience in the development of sustainable finance and prospects for implementation in Kazakhstan. *Economics: The Strategy and Practice*, 18(4), 90-108. <https://doi.org/10.51176/1997-9967-2023-4-90-108>

Kuur, O.V., Varavin, Ye. V., & Kozlova, M. V. (2024). ESG transformation factors of Kazakhstan's economy in the context of sustainable development. *Economy: Strategy and Practice*, 19(2), 20-40. <https://doi.org/10.51176/1997-9967-2024-2-20-40>

Leal Filho, W., Wall, T., Williams, K., Dinis, M.A.P., Martin, R. M. F., Mazhar, M., & Gatto, A. (2025). European sustainability reporting standards: An assessment of requirements and preparedness of EU companies. *Journal of environmental management*, 380, 125008. <https://doi.org/10.1016/j.jenvman.2025.125008>

Li, T.-T., Wang, K., Sueyoshi, T., & Wang, D. D. (2021). ESG: Research progress and future prospects. *Sustainability*, 13(21), 11663. <https://doi.org/10.3390/su132111663>

Luo, Z., Li, Y., Nguyen, L. T., Jo, I., & Zhao, J. (2024). The moderating role of country governance I the link between ESG and financial performance: A study of listed companies in 58 countries. *Sustainability*, 16, 5410. <https://doi.org/10.3390/su16135410>

Mahmood, Z., Kouser, R., Ali, W., Ahmad, Z., & Salman, T. (2018). Does corporate governance affect sustainability disclosure? A mixed methods study. *Sustainability*, 10(1), 207. <https://doi.org/10.3390/su10010207>

Matanle, P., Shin, Y., Jun, H., Fakharuzi, Z., Li, Y., Bradley, J., & McCafferty, J. (2025). Corporate Information Disclosure for Sustainable Financial Investment: Challenges and Contradictions in Reporting the 'S' in ESG in South Korea (No.zg5vd\_v1). Center for Open Science. <https://doi.org/10.31235/osf.io/zg5vd>

Miller, K. (2025). Integrating ESG principles into corporate governance: A strategic and regulatory perspective. *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, 87(3), 63-82. <https://doi.org/10.14746/rpeis.2025.87.3.05>

Penjiyev, A. (2024). Roadmap for Greening the Economy of Turkmenistan. *IgMin Research*, 2 (5), 341-347. <https://doi.org/10.61927/igmin184>

Rashid, A. (2018). The influence of corporate governance practices on corporate social responsibility reporting. *Social Responsibility Journal*, 14(1), 20-39. <https://doi.org/10.1108/srj-05-2016-0080>

Rasool, N., Arunachalam, M., Hewa Wellalage, N., & Kumar, V. (2025). Unveiling the relationship between ESG and growth of unlisted firms: Empirical insights from Eastern Europe and Central Asia. *Business Strategy and the Environment*, 34(5), 5669-5686. <https://doi.org/10.1002/bse.4257>

Schumacher, K., Chenet, H., & Volz, U. (2020). Sustainable finance in Japan. *Journal of Sustainable Finance & Investment*, 10(2), 213-246. <https://doi.org/10.1080/20430795.2020.1735219>

Shaislamova, N.K., & Kudratova, F. N. (2024). Principles of ESG implementation in companies of Uzbekistan: A comprehensive analysis. *JournalNX: A Multidisciplinary Peer Reviewed Journal*, 10(5), 42-51. ISSN 2581-4230. <https://repo.journalnx.com/index.php/nx/article/view/5350/5084>

Spankulova, L., Aben, A., Nurmukhametov, N., & Zeinolla, S. (2025). Integration of ESG Principles into the Sustainable Development Strategy of Kazakhstan. *Journal of Central Asian Studies*, 23(1), 61-81. <https://doi.org/10.52536/3006-807X.2025-1.004>

Sustainability Standards Board of Japan (SSBJ). (2025). SSBJ issues Inaugural Sustainability Disclosure Standards to be applied in Japan. [https://www.ssb-j.jp/en/ssbj\\_standards/2025-0305.html](https://www.ssb-j.jp/en/ssbj_standards/2025-0305.html)

Tariq, M. U. (2024). Integrating ESG principles into corporate governance for sustainable ecosystem services. On R. Casrahno (Ed.), *ESG and Ecosystem Services for Sustainability*, 89-118. <https://doi.org/10.4018/979-8-3693-3771-4.ch004>

UNDP. (2021). Solar energy to power water supply in remote desert villages. United Nations Development Programme. <https://www.undp.org/turkmenistan/stories/solar-energy-power-water-supply-remote-desert-villages>

UNDP. (2023). UNDP actively promotes renewable energy and energy efficiency in Turkmenistan. United Nations Development Programme. <https://www.undp.org/turkmenistan/press-releases/undp-actively-promotes-renewable-energy-and-energy-efficiency-turkmenistan>

Yudina Y. (2025). Узбекистан придумал, как диверсифицировать долг. Investing.com. <https://ru.investing.com/news/general-news/article-2936771>

Zhakiyev, N., Khamzina, A., Zhakiyeva, S., De Miglio, R., Bakdolotov, A., & Cosmi, C. (2023). Optimization modeling of the decarbonization scenario of the total energy system of Kazakhstan until 2060. *Energies*, 16(13), 5142. <https://doi.org/10.3390/en16135142>

Давтян, В.С., & Хачикян, С.Р. (2024). Сравнительный анализ состояния экологизации энергетических систем в ЕАЭС: возможности энергетического перехода. *Вестник Российского университета дружбы народов. Серия: Экономика*, 32(3), 447-469. <https://doi.org/10.22363/2313-2329-2024-32-3-447-469>

Зинетуллина Ж.Е., Нургалиева А.М., Шерзатов К.А. (2025). Оценка вовлеченности международных компаний в процессы ESG-трансформации. *Central Asian Economic Review*, 3, 6-21. <https://doi.org/10.5282/1/2789-4401-2025-3-6-21>

Исмаилахунова, А.М., Долотбакова, А.К., & Парамонов, Н.М. (2025). Устойчивое финансирование: проблемы внедрения и развития в Кыргызстане. *Известия Национальной академии наук Кыргызской Республики*, (3), 55-59. <https://ilim.naskr.kg/index.php/main/article/view/869>

Центр устойчивого развития СКОЛКОВО. (2022). Аналитический обзор «Новые вызовы и перспективы: ESG-контекст в странах Центральной Азии». <https://www.skolkovo.ru/researches/novye-vyzovy-i-perspektivy-esg-kontekst-v-stranah-centralnoj-azii/>

## References

AIFC, GIP (2024). State of Sustainable Finance in Central Asia. Astana International Finance Centre Authority. [https://aifc.kz/wp-content/uploads/2024/07/1.3-ca-to-publish-eng\\_compressed.pdf](https://aifc.kz/wp-content/uploads/2024/07/1.3-ca-to-publish-eng_compressed.pdf)

AIFC (2025). Emissions Trading Systems and Voluntary Carbon Market: Global Overview and Prospects for Kazakhstan. <https://aifc.kz/wp-content/uploads/2025/02/emissions-trading-systems-and-voluntary-carbon-market-global-overview-and-prospects-for-kazakhstan.pdf>

Alsayegh, M.F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. *Sustainability*, 12(9), 3910. <https://doi.org/10.3390/su12093910>

Azretbergenova, G., Yessymkhanova, Z., & Yessenali, A. (2023). Development of ESG-transparency in the financial market of Kazakhstan. *State Audit*, 59(2), 43-52. <https://doi.org/10.55871/2072-9847-2023-59-2-43-52>

Centr ustoichivogo razvitiya SKOLKOVO [SKOLKOVO Center for Sustainable Development] (2022). Analiticheskij obzor «Novye vyzovy I perspektivy: ESG-kontekst v stranah Central'noj Azii» [Analytical Review New Challenges and Prospects: ESG Context in Central Asia countries]. Available at: <https://www.skolkovo.ru/researches/novye-vyzovy-i-perspektivy-esg-kontekst-v-stranah-centralnoj-azii/> (accessed 29.11.2025)

Cui, X., Wang, X. Z., & Li, T. (2025). The impact of ESG compliance on the operating efficiency of commercial banks in Central Asia. *Frontiers in Interdisciplinary Applied Science*, 1(1), 34-46. ISSN 3008-1394. <https://doi.org/10.24294/jipd9195>

Davtyan, V.S., & Khachikyan, S.R. (2024). Sravnitel'nyj analiz sostoyaniya ekologizacii energeticheskikh system v EAES: vozmozhnosti energeticheskogo perekhoda [Comparative analysis of the greening of energy system in the EAEU: prospects for the energy transition]. *Vestnik Rossijskogo universiteta druzhby narodov. Seriya: Ekonomika*, 32(3), 447-469. <https://doi.org/10.22363/2313-2329-2024-32-3-447-469>

Devi, L. V., Ariefianto, M. D., & Juliana, R. (2024). ESG, country governance indicators and company value: Evidence from Asia. *Journal of Infrastructure, Policy and Development*, 8(14), 9195. <https://doi.org/10.24294/jipd9195>

Dinh, T. Q., & Calabro, A. (2018). Asian family firms through corporate governance and institutions: A systematic review of the literature and agenda for future research. *International Journal of Management Reviews*, 21(1), 50-75. <https://doi.org/10.1111/ijmr.12176>

Duque-Grisales, E., & Aguilera-Caracuel, J. (2021). Environmental, social and governance (ESG) scores and financial performance of multilaterals: Moderating effects of geographic international diversification and financial slack. *Journal of Business Ethics*, 168(2), 315-334. <https://doi.org/10.1007/s10551-019-04177>

ESG Awareness in Eurasia: Survey. PWC Kazakhstan Edition. (2024, July 1). <https://www.pwc.com/kz/en/assets/esg-awareness/kz-esg-awareness-eng.pdf>

ESG Awareness in Eurasia: Survey. PWC Uzbekistan Edition. (2024, July 1). <https://www.pwc.com/kz/en/assets/esg-awareness/uz-esg-awareness-eng.pdf>

EY Strategy and Consulting CO., Ltd. (2023). What's next for Japanese sustainability disclosure standards? Ernst & Young Japan. [https://www.ey.com/en\\_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards?utm\\_source=chatgpt.com](https://www.ey.com/en_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards?utm_source=chatgpt.com)

IFRS Foundation. (2023). Jurisdictional snapshot: Japan. <https://www.ifrs.org/content/dam/ifrs/publications/sustainability-jurisdictions/pdf-snapshots/japan-ifrs-snapshot.pdf>

Ismailakhunova, A.M., Dolotbakova, A.K., Paramonov, N.M. (2025). Ustoichivoe finansirovaniye: problem vnedreniya I razvitiya v Kyrgyzstane [Sustainable finance: challenges of implementation and development in Kyrgyzstan]. *Izvestiya Nacional'noj akademii nauk Kyrgyzskoj Respublikii* [Proceedings of the National Academy of Sciences of the Kyrgyz Republic], (3), 55-59. <https://ilim.naskr.kg/index.php/main/article/view/869>

Iwaszczuk, N., Wolak, J., & Iwaszczuk, A. (2021). Turkmenistan's gas sector development scenarios based on econometric and SWOT analysis. *Energies*, 14(10), 2740. <https://doi.org/10.3390/en14102740>

Jumaniyazov, I.T., Aminova, N.U. (2025). Green Sovereign Bonds: A Financial Opportunity of Risk for Developing Countries? *Modern American Journal of Business, Economics, and Entrepreneurship*, 1(3), 361-371. <https://usajournals.org/index.php/4/article/view/546/585>

Kabilovna, S. N., & Nasriddinovna, K. F. (2024). Principles of ESG implementation in companies of Uzbekistan: A Comprehensive analysis. *JournalNX*, 10(5), 42-51. <https://repo.journalnx.com/index.php/nx/article/view/5350/5084>

Komendantova, N., Rovenskaya, E., Strelkovskii, N., & Santiago, F. (2022). Impacts of various connectivity processes in Central Asia on sustainable development of Kyrgyzstan. *Sustainability*, 14(12), 6998. <https://doi.org/10.3390/su14126998>

Kosowska, K., & Kosowski, P. (2022). Energy security of hydropower producing countries – The cases of Tajikistan and Kyrgyzstan. *Energies*, 15(21), 7822. <https://doi.org/10.3390/en15217822>

Kuanova, L., Sagiyeva, R., & Zaitenova, N. (2023). Analytical review of experience in the development of sustainable finance and prospects for implementation in Kazakhstan. *Economics: The Strategy and Practice*, 18(4), 90-108. <https://doi.org/10.51176/1997-9967-2023-4-90-108>

Kuur, O.V., Varavin, Ye. V., & Kozlova, M. V. (2024). ESG transformation factors of Kazakhstan's economy in the context of sustainable development. *Economy: Strategy and Practice*, 19(2), 20-40. <https://doi.org/10.51176/1997-9967-2024-2-20-40>

Leal Filho, W., Wall, T., Williams, K., Dinis, M.A.P., Martin, R. M. F., Mazhar, M., & Gatto, A. (2025). European sustainability reporting standards: An assessment of requirements and preparedness of EU companies. *Journal of environmental management*, 380, 125008. <https://doi.org/10.1016/j.jenvman.2025.125008>

Li, T.-T., Wang, K., Sueyoshi, T., & Wang, D. D. (2021). ESG: Research progress and future prospects. *Sustainability*, 13(21), 11663. <https://doi.org/10.3390/su132111663>

Luo, Z., Li, Y., Nguyen, L. T., Jo, I., & Zhao, J. (2024). The moderating role of country governance I the link between ESG and financial performance: A study of listed companies in 58 countries. *Sustainability*, 16, 5410. <https://doi.org/10.3390/su16135410>

Mahmood, Z., Kouser, R., Ali, W., Ahmad, Z., & Salman, T. (2018). Does corporate governance affect sustainability disclosure? A mixed methods study. *Sustainability*, 10(1), 207. <https://doi.org/10.3390/su10010207>

Matanle, P., Shin, Y., Jun, H., Fakharuzi, Z., Li, Y., Bradley, J., & McCafferty, J. (2025). Corporate Information Disclosure for Sustainable Financial Investment: Challenges and Contradictions in Reporting the 'S' in ESG in South Korea (No.zg5vd\_v1). Center for Open Science. <https://doi.org/10.31235/osf.io/zg5vd>

Miller, K. (2025). Integrating ESG principles into corporate governance: A strategic and regulatory perspective. *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, 87(3), 63-82. <https://doi.org/10.14746/rpeis.2025.87.3.05>

Penjiyev, A. (2024). Roadmap for Greening the Economy of Turkmenistan. *IgMin Research*, 2 (5), 341-347. <https://doi.org/10.61927/igmin184>

Rashid, A. (2018). The influence of corporate governance practices on corporate social responsibility reporting. *Social Responsibility Journal*, 14(1), 20-39. <https://doi.org/10.1108/srj-05-2016-0080>

Rasool, N., Arunachalam, M., Hewa Wellalage, N., & Kumar, V. (2025). Unveiling the relationship between ESG and growth of unlisted firms: Empirical insights from Eastern Europe and Central Asia. *Business Strategy and the Environment*, 34(5), 5669-5686. <https://doi.org/10.1002/bse.4257>

Schumacher, K., Chenet, H., & Volz, U. (2020). Sustainable finance in Japan. *Journal of Sustainable Finance & Investment*, 10(2), 213-246. <https://doi.org/10.1080/20430795.2020.1735219>

Shaislamova, N.K., & Kudratova, F. N. (2024). Principles of ESG implementation in companies of Uzbekistan: A comprehensive analysis. *JournalNX: A Multidisciplinary Peer Reviewed Journal*, 10(5), 42-51. ISSN 2581-4230. <https://repo.journalnx.com/index.php/nx/article/view/5350/5084>

Spankulova, L., Aben, A., Nurmukhametov, N., & Zeinolla, S. (2025). Integration of ESG Principles into the Sustainable Development Strategy of Kazakhstan. *Journal of Central Asian Studies*, 23(1), 61-81. <https://www.undp.org/turkmenistan/stories/solar-energy-power-water-supply-remote-desert-villages>

Sustainability Standards Board of Japan (SSBJ). (2025). SSBJ issues Inaugural Sustainability Disclosure Standards to be applied in Japan. [https://www.ssb-j.jp/en/ssbj\\_standards/2025-0305.html](https://www.ssb-j.jp/en/ssbj_standards/2025-0305.html)

Tariq, M. U. (2024). Integrating ESG principles into corporate governance for sustainable ecosystem services. On R. Casrahno (Ed.), *ESG and Ecosystem Services for Sustainability*, 89-118. <https://doi.org/10.4018/979-8-3693-3771-4.ch004>

UNDP. (2021). Solar energy to power water supply in remote desert villages. United Nations Development Programme. <https://www.undp.org/turkmenistan/stories/solar-energy-power-water-supply-remote-desert-villages>

UNDP. (2023). UNDP actively promotes renewable energy and energy efficiency in Turkmenistan. United Nations Development Programme. <https://www.undp.org/turkmenistan/press-releases/undp-actively-promotes-renewable-energy-and-energy-efficiency-turkmenistan>

Yudina Y. (2025). Uzbekistan pridumal, kak diversificirovat' dolg [Uzbekistan devised how to diversify debt]. *Investing.com*, 06 October 2025. Available at: <https://ru.investing.com/news/general-news/article-2936771> (accessed 29.11.2025)

Zhakiyev, N., Khamzina, A., Zhakiyeva, S., De Miglio, R., Bakdolotov, A., & Cosmi, C. (2023). Optimization modeling of the decarbonization scenario of the total energy system of Kazakhstan until 2060. *Energies*, 16(13), 5142. <https://doi.org/10.3390/en16135142>

Zinetullina, Zh. E., Nurgalieva, A. M., & Sherzatov, K. A. (2025). Ocenka vovlechennosti mezhdunarodnyh kompanij v processy ESG-transformacii [Assessment of the involvement of international companies in the ESG transformation processes]. *Central Asian Economic Review*, 3, 6-21. <https://doi.org/10.52821/2789-4401-2025-3-6-21>

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